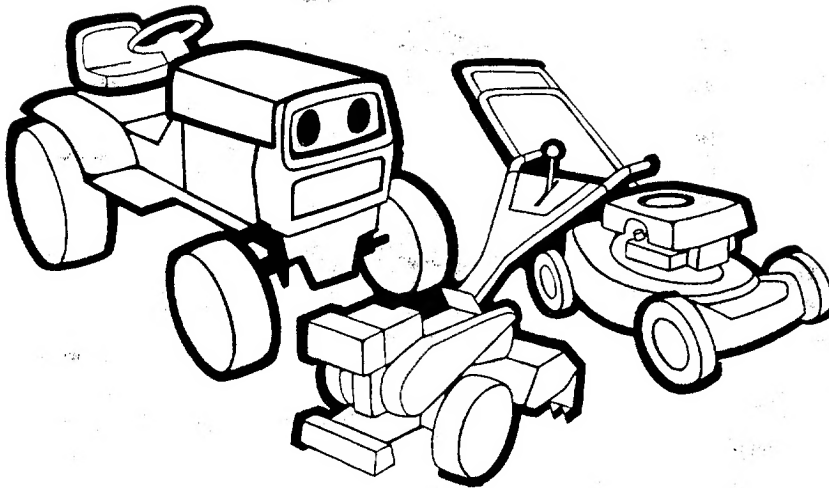


OWNERS MANUAL



**POWER
VACUUM**

**ASSEMBLY
OPERATION
MAINTENANCE
PARTS LIST**

**Model Number
244-660-000
24665L**

**Important:
Read Safety Rules and
Instructions Carefully**

Thank you for purchasing an
American built product.

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LIMITED WARRANTY

For one year from the date of original retail purchase, MTD PRODUCTS INC will either repair or replace, at its option, free of charge, F.O.B. factory or authorized service firm, any part or parts found to be defective in material or workmanship. Transportation charges for the movement of any power equipment unit or attachment are the responsibility of the purchaser. Transportation charges for any parts submitted for replacement under this warranty must be paid by the purchaser unless such return is requested by MTD PRODUCTS INC.

This warranty will not apply to any part which has become inoperative due to misuse, excessive use, accident, neglect, improper maintenance, alterations, or unless the unit has been operated and maintained in accordance with the instructions furnished. This warranty does not apply to the engine, motor, battery, battery charger or component parts thereof. Please refer to the applicable manufacturer's warranty on these items.

This warranty will not apply where the unit has been used commercially.

Warranty service is available through your local authorized service dealer or distributor. If you do not know the dealer or distributor in your area, please write to the Customer Service Department of MTD.

The return of a complete unit will not be accepted by the factory unless prior written permission has been extended by MTD.

This warranty gives you specific legal rights. You may also have other rights which vary from state to state.



WARNING

TO PURCHASERS OF INTERNAL COMBUSTION ENGINE EQUIPPED MACHINERY OR DEVICES IN THE STATE OF CALIFORNIA

The equipment which you have just purchased does not have a spark arrester. If this equipment is used on any forest covered land, brush covered land, or grass covered unimproved land in the State of California, before using on such land, the California law required that a spark arrester be provided. In addition, spark arrester required by law to be in effective working order. The spark arrester must be attached to the exhaust system a comply with Section 4442 of the California Public Resources Code.

IMPORTANT

It is suggested that this manual be read in its entirety before attempting to assemble or operate. Keep this manual in a safe place for future reference and for ordering replacement parts.

This unit is shipped **WITHOUT GASOLINE or OIL**. After assembly, see separate engine manual for proper fuel and engine oil recommendations.

SAFE OPERATION PRACTICES FOR POWER VACUUMS

1. Read this operating and service instructing manual carefully. Be thoroughly familiar with the controls and proper use of the power vacuum.
2. Never allow children to operate this power vacuum.
3. Keep the area of operation clear of all persons, particularly small children and pets.
4. Check fuel before starting engine. Do not fill fuel tank indoors, when engine is running, or while engine is hot. Wipe off any spilled fuel before starting engine.
5. Do not change engine governor settings.
6. Do not put hands near rotating parts for any reason.
7. If the power vacuum should start to vibrate abnormally, stop the engine and check immediately for the cause. Vibration is generally a warning of trouble.
8. Before cleaning, repairing or inspecting, make certain all moving parts have come to a complete stop. Disconnect spark plug wire and keep wire away from plug to prevent accidental starting. Also keep throttle control lever in the stop position.
9. If the power vacuum should become blocked with debris at any point, shut engine off and wait until the impeller comes to a complete stop before attempting to remove the obstruction. Disconnect spark plug wire to prevent accidental starting.
10. Check all bolts for tightness at frequent periods.
11. Never store this power vacuum with fuel in the tank. Allow engine to cool before storing in any enclosure.
12. Keep bag and equipment free of debris when not in use.
13. Never operate this power vacuum unless air duct and vacuum bag are properly affixed in their place. Large zippered end of bag must be closed when operating to prevent objects from being blown out.
14. Never empty vacuum bag when engine is running.
15. Never change auxiliary hose attachment when engine is running.
16. The manufacturer recommends that the operator wear safety glasses or some other suitable eye protection when operating this machine.
17. Check the vacuum bag frequently for wear and replace when necessary.

ASSEMBLY INSTRUCTIONS

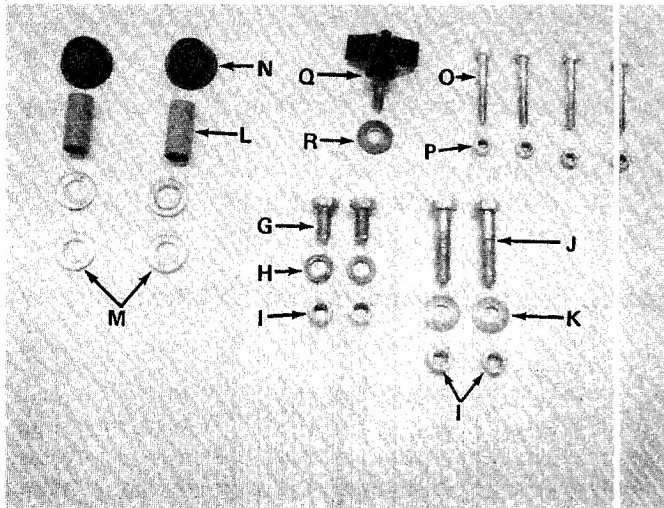
TOOLS REQUIRED:

- (2) 9/16" Wrenches
- (2) 7/16" Wrenches
- (1) Hammer or Rubber Mallet

LOOSE PARTS IN CARTON (See figure 1):

- A (1) Lower Handle
- B (2) Rear Wheels
- C (1) Upper Handle
- D (1) Air Duct Assembly
- E (1) Bag
- F (1) Hardware Pack

FIGURE 1



CONTENTS OF HARDWARE PACK (See figure 2):

- G (2) Hex Bolts 3/8-16 x 3/4" Long
- H (2) Lock Washers 3/8" I.D.
- I (4) Hex Nuts 3/8-16 Thread
- J (2) Hex Bolts 3/8-16 x 1-1/2" Long
- K (2) Belleville Washers 3/8" I.D. x 1-1/8" O.D.
- L (2) Spacers 1/2" I.D. x 15/16" Long
- M (4) Flat Washers 1/2" I.D. x 1" O.D.
- N (2) Black Push Caps
- O (4) Hex Bolts 1/4-20 x 1-3/4" Long
- P (4) Hex Lock Nuts 1/4-20 Thread
- Q (1) Thumb Screw 5/16-18 Thread
- R (1) Belleville Washer 5/16" I.D. x 7/8" O.D.
- S (2) Stud Pins (Not Shown)
- T (2) Push-On Speed Nuts (Not Shown)

FIGURE 2

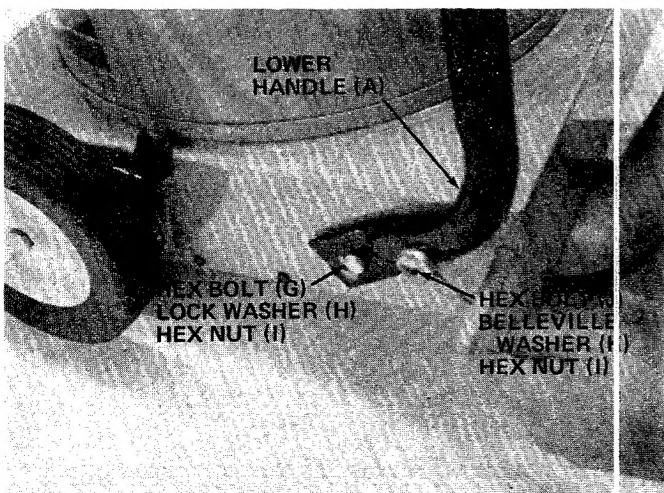


FIGURE 3

1. Remove the vacuum, loose parts, hardware pack and literature from the carton. Make certain all parts and literature have been removed before the carton is discarded.
2. Raise the back of the unit off the floor approximately 3 inches and block it so that the lower handle and rear wheels may be assembled.
3. Place lower handle (A) in position on the vacuum, lining up the holes in the handle with the holes on the frame. See figure 3. Place hex bolts (G) (3/4" long) through lower hole in handle and frame. Secure with lock washers (H) and hex nuts (I) on the inside of frame, finger tight only.
4. Place hex bolts (J) through upper hole in handle and frame. Secure with belleville washers (K) (cupped side against the frame) and hex nuts (I).
5. Tighten all four nuts and bolts using two 9/16" wrenches.

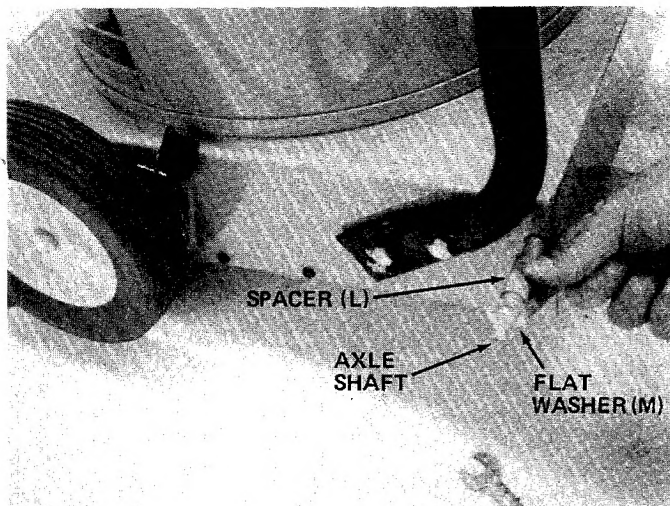


FIGURE 4

6. Slide spacers (L) onto the axle shafts. Place one flat washer (M) on each shaft next to the spacers. See figure 4.

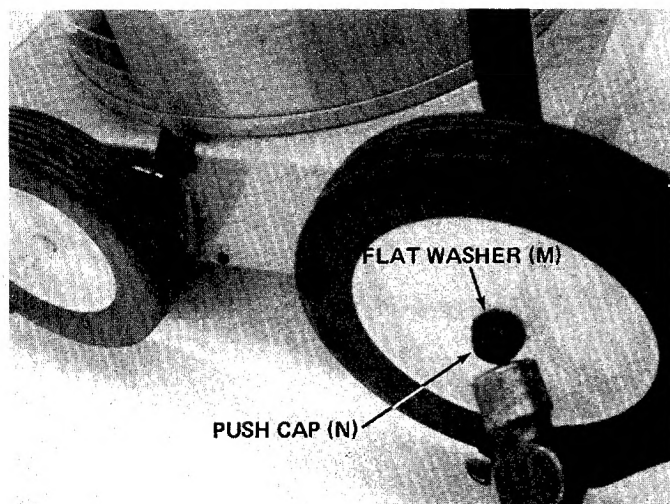


FIGURE 5

7. Place rear wheels in position on the shafts, then another flat washer (M). Secure with black push cap (N) by placing the push cap in position and tapping on with hammer or rubber mallet. See figure 5.

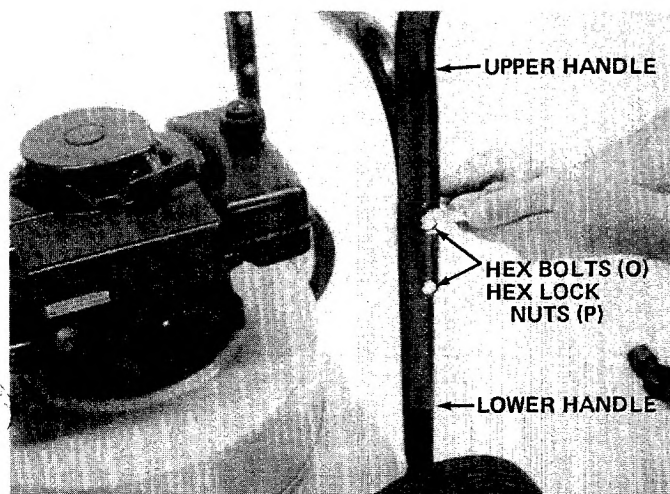


FIGURE 6

8. Place the upper handle (C) in position over lower handle. Fasten with four hex bolts (O) and hex lock nuts (P) provided. See figure 6. Two 7/16" wrenches are required.

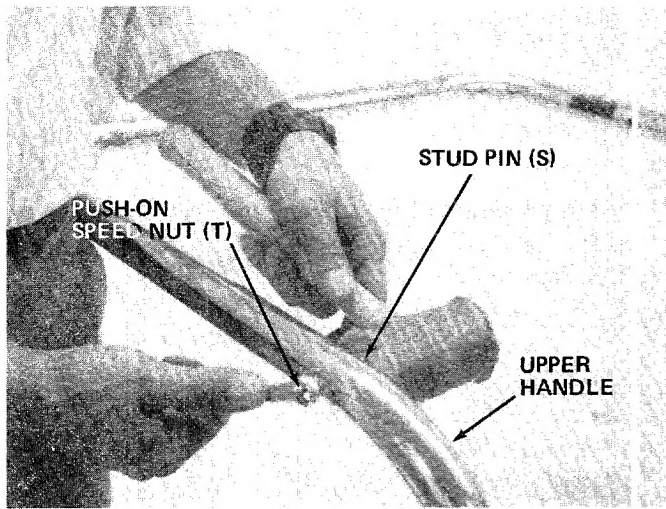


FIGURE 7

9. Place the stud pins (S) in holes in upper handle (head of pins go to the inside of handle). Secure pins with push-on speed nuts (T) by holding speed nut with box wrench and tapping pin with hammer. See figure 7.

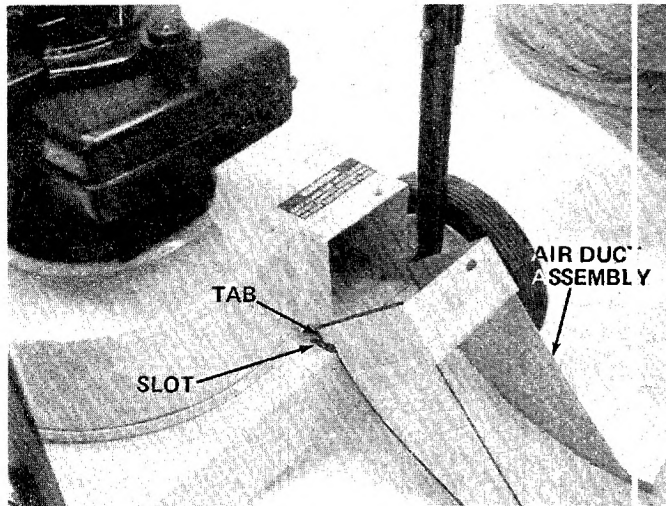


FIGURE 8

10. Place the tabs on the air duct assembly (D) into the slots in the frame as shown in figure 8. Raise the air duct into position.

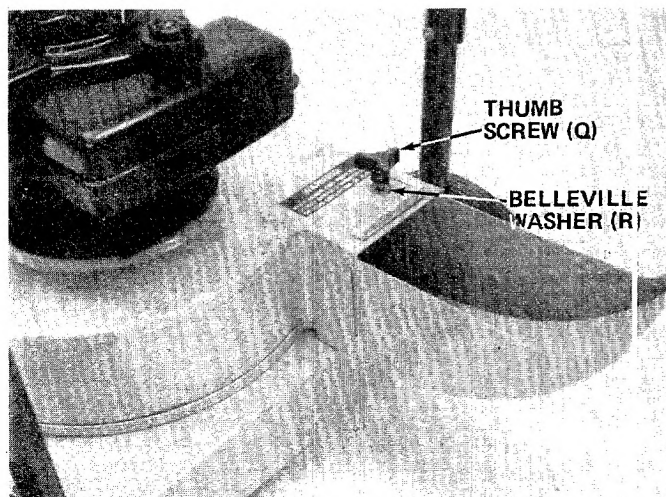


FIGURE 9

11. Secure air duct with thumb screw (Q) and Belleville washers (R). Cupped side of washer must be against the air duct. See figure 9.

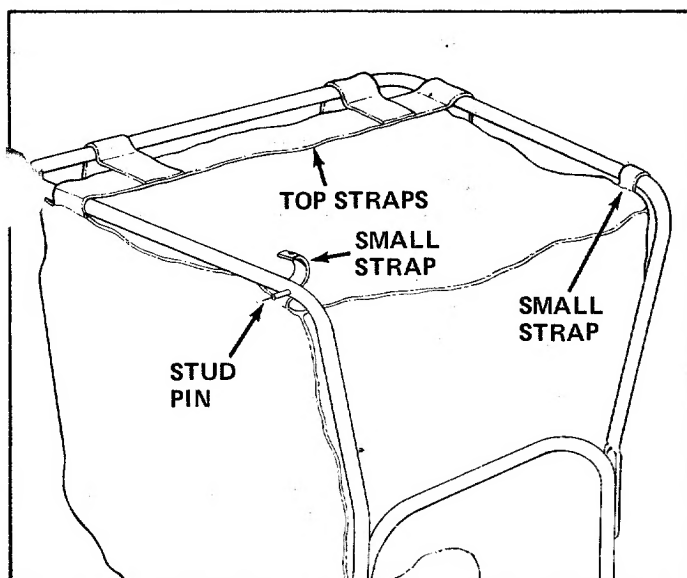


FIGURE 10

12. Assemble the bag (E) by slipping the top straps on the bag over upper handle. Hook the two small straps over the stud pins on handle. See figure 10.

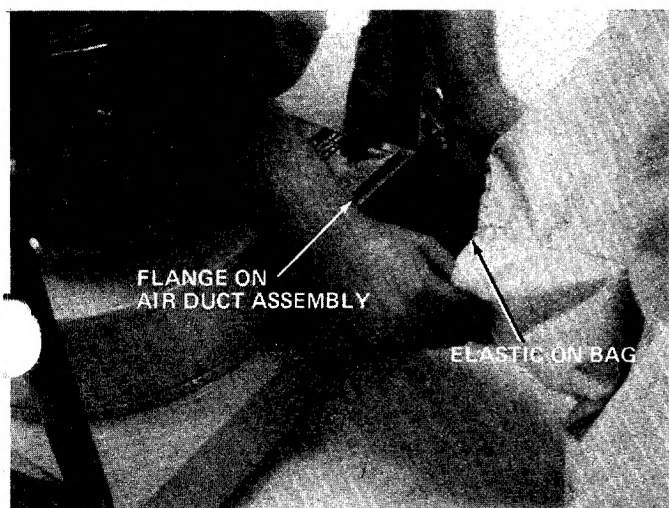


FIGURE 11

13. Slip the elastic opening of the bag over the air duct assembly, making certain the elastic opening is secured behind the flanges on all four sides of on the air duct. See figure 11.

OPERATION

BEFORE STARTING

Service engine with gas and oil. See engine manual packed with vacuum for complete instructions for care and maintenance of engine. **READ DIRECTIONS CAREFULLY.**



CAUTION

Revolving Blades - Keep hands and feet away from all openings.

START ENGINE

After the engine has been properly fueled and oiled (refer to engine operating and maintenance instructions), start engine as follows.

1. Move throttle control lever on engine to **START** position.
2. Crank engine. Pull recoil with quick firm pull. Do not pull out so far the rope stops with a jerk as this will cause rope failure. Do not allow rope and handle to snap back into place.
3. After two or three full firm pulls on recoil (or as soon as engine fires), move speed control to **RUN** position.

TO STOP ENGINE

1. To stop engine, move throttle control lever to **STOP** position.
2. Disconnect spark plug wire and ground to prevent accidental starting while equipment is unattended.

Operate a new engine at intermediate speeds and light load for the first few hours as you would a new automotive engine.

The bag may be emptied using the large zipper as shown in figure 12. Be certain the zipper is closed when operating the unit.

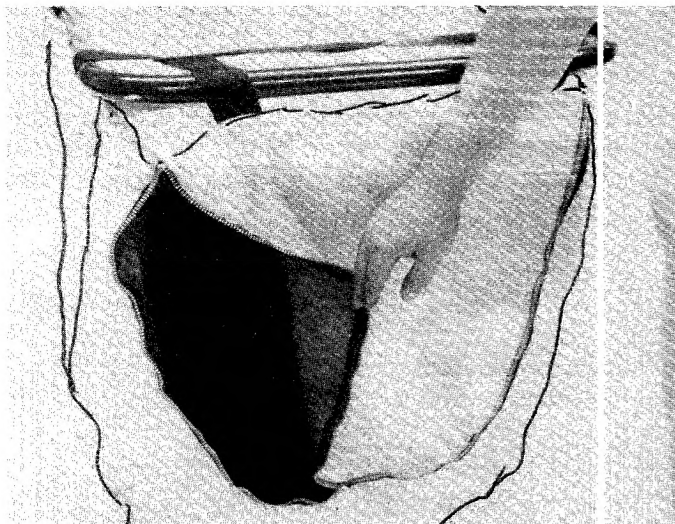


FIGURE 12.

ADJUSTMENTS



CAUTION

Do not at any time make any adjustment to the unit without first stopping engine and disconnecting spark plug wire.

HEIGHT ADJUSTMENT

An adjusting plate and thumb lever at both front wheels provide height adjustment for the vacuum. See figure 13. Each adjusting plate has nine positions. Height will be changed when the thumb lever is moved from one position to another. Simply depress thumb lever towards wheel and move wheel and lever assembly to desired position. Both wheels must be placed in the same relative position. Lower the front of the unit to obtain more suction.

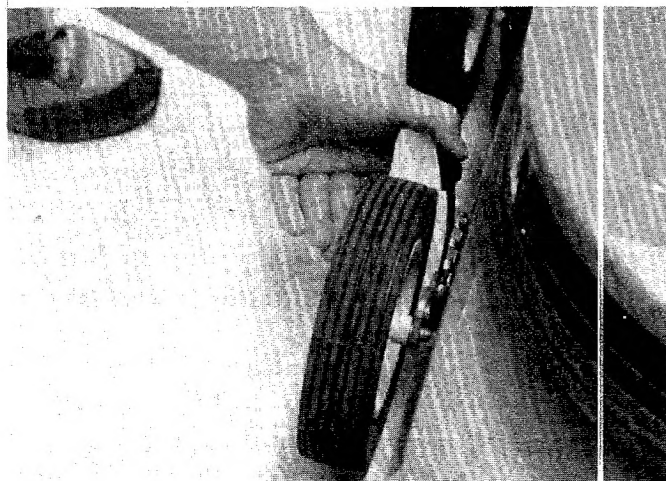


FIGURE 13

CARBURETOR ADJUSTMENT



WARNING

If any adjustments are made to the engine while the engine is running (e.g. carburetor), disengage all clutches. Keep clear of all moving parts. Be careful of heated surfaces and muffler.

If carburetor needs adjustment to start or for operation, see "Carburetor Adjustment" section of engine manual.

MAINTENANCE



WARNING

Disconnect spark plug wire and ground it against the engine before performing any repairs or maintenance.

BAG

Under normal usage the bag is subject to wear, should be checked periodically. Be sure any replacement complies with the manufacturer's recommendation. Wash bag periodically with water. Allow to dry thoroughly in the shade. Do not use heat.

ENGINE

Refer to engine manual for proper maintenance procedures. Follow instructions carefully.

OFF-SEASON STORAGE

The following steps should be taken to prepare the vacuum for storage.

1. Clean the engine and the entire unit thoroughly.
2. Refer to engine manual for correct engine storage instructions.
3. Store in a clean, dry area.



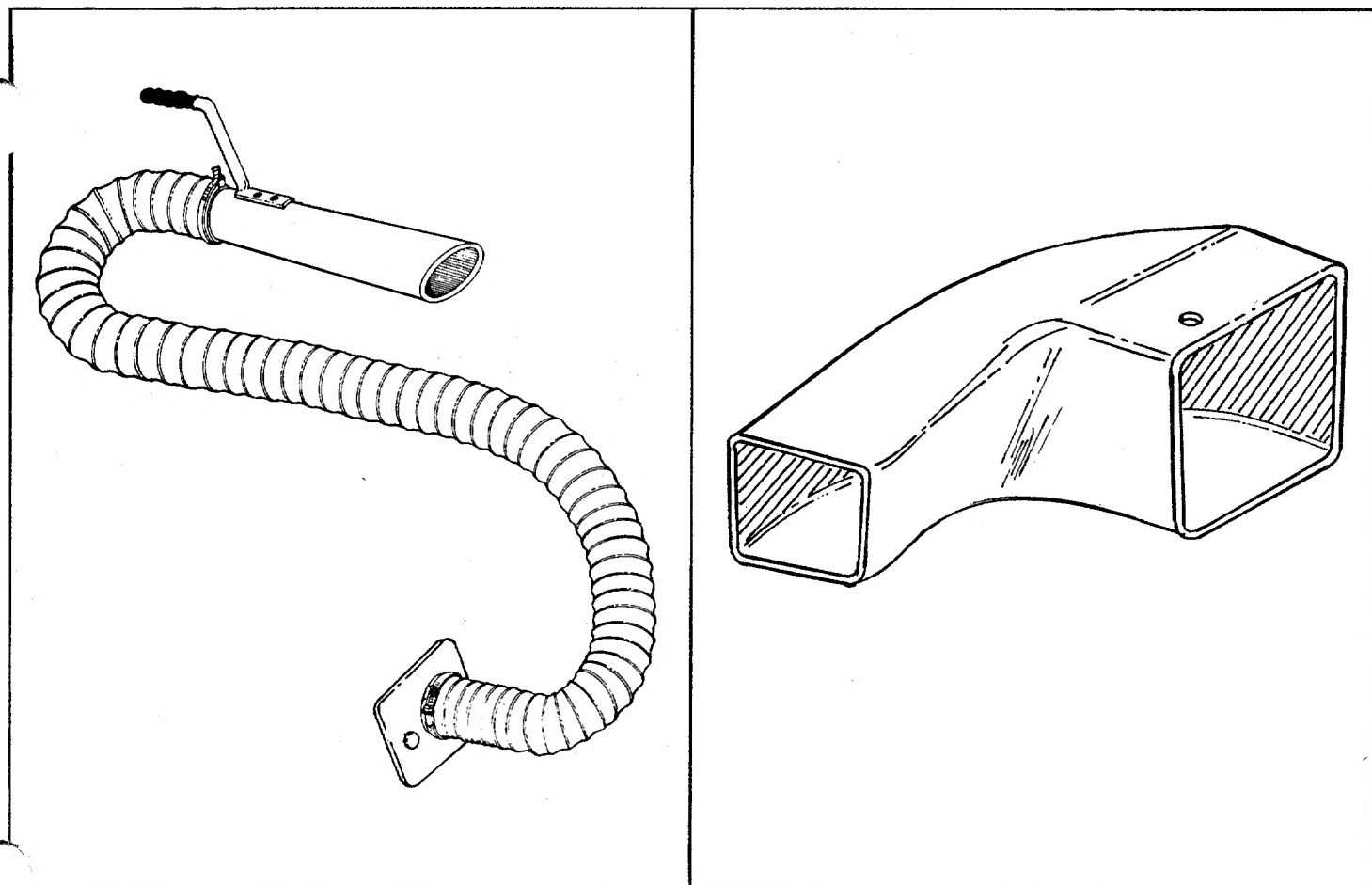
CAUTION

When storing any type of power equipment in an unventilated or metal storage shed, care should be taken to rust proof the equipment. Using a light oil or silicone, coat the equipment especially all moving parts.

TROUBLE SHOOTING CHART

PROBLEM	CAUSE	REMEDY
1. Engine fails to start.	A. Check fuel tank for gas. B. Spark plug lead wire disconnected. C. Faulty spark plug.	A. Fill tank if empty. B. Connect lead wire. C. Spark should jump gap between control electrode and side electrode. If spark does not jump, replace the spark plug.
2. Hard starting or loss of power.	A. Spark plug wire loose. B. Dirty air cleaner.	A. Connect and tighten spark plug wire. B. Clean air cleaner as described in engine manual.
3. Engine overheats.	A. Carburetor not adjusted properly. B. Air flow restricted. C. Engine oil level low.	A. Adjust carburetor. See engine manual. B. Remove blower housing on engine and clean as described in the engine manual. C. Fill crankcase with the proper oil.
4. Excessive vibration.	A. Bent crankshaft. B. Impeller assembly out of balance.	A. Replace crankshaft (should be done by an authorized service dealer). B. Replace impeller assembly

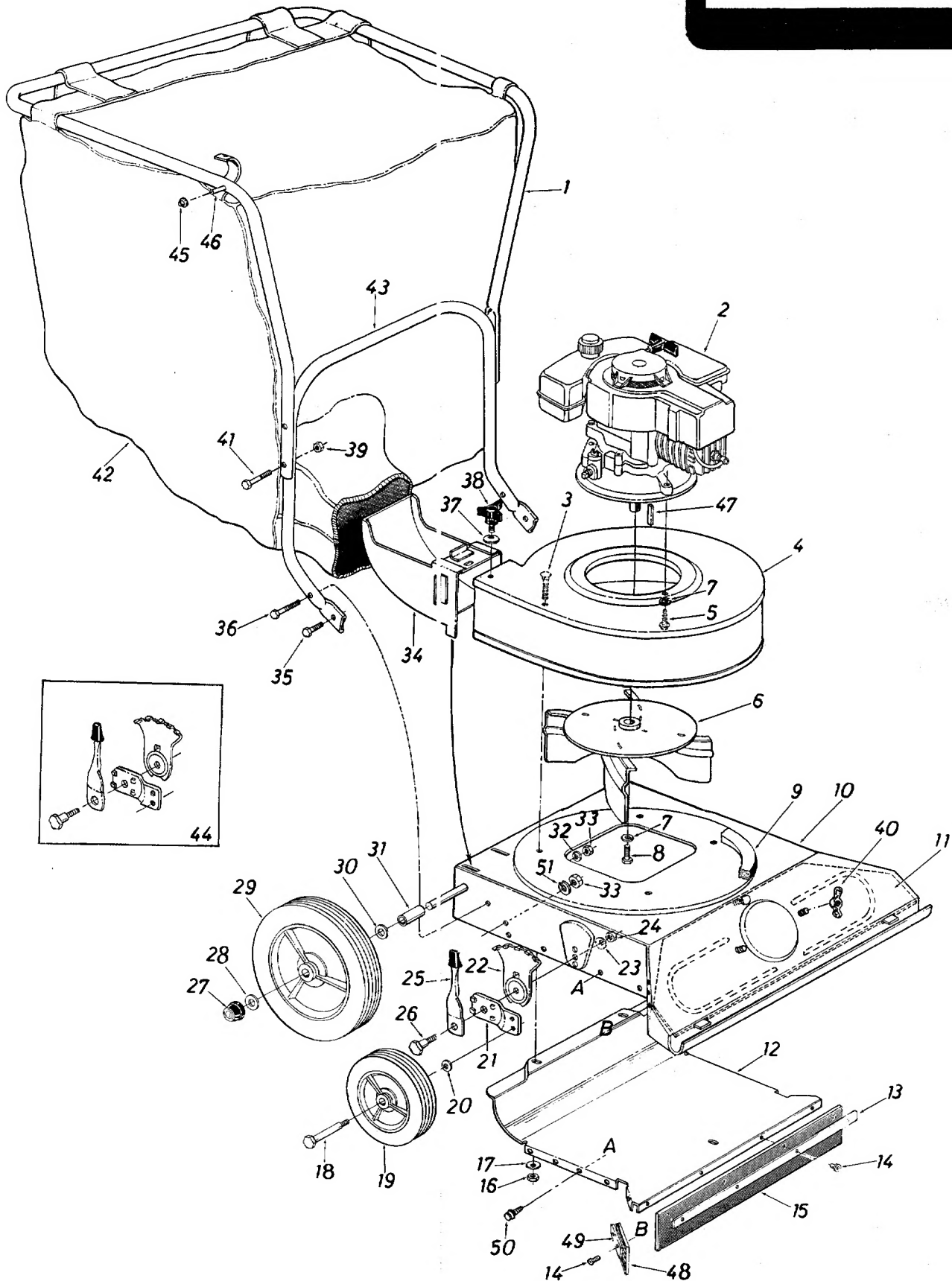
NOTE: For repairs beyond the minor adjustments listed above, please contact your local authorized service dealer.



Hose Attachment Kit Model 294-210-000 and Blower Conversion Kit Model 294-211-000
are available as optional equipment.

Model 660 and 24665

IF YOU WRITE TO US ABOUT THIS ARTICLE
OR IF YOU ORDER REPLACEMENT PARTS AL-
WAYS MENTION THIS MODEL & SERIAL NO
MODEL



Model 660 and 24665

PARTS LIST FOR MODEL 660 POWER VACUUM

Ref. No.	Part No.	Color Code	Description	New Part	Ref. No.	Part No.	Color Code	Description	New Part
1	749-0480		Upper Handle		28	736-0272		Fl.-Wash. 1/2" I.D. x 1.0" O.D. x .06	
2	-----		Engine		29	734-1140		Wheel Ass'y. Comp. 10 x 1.75" - Rear	N
3	710-0260		Carriage Bolt 5/16-18 x .62" Lg.*		30	736-0272		Fl.-Wash. 1/2" I.D. x 1.0" O.D. x .06	
4	15784 --- 488		Blower Housing Ass'y.		31	750-0588		Wheel Spacer 1/2" I.D. x 15/16" Lg.	N
5	710-0654		Hex Tap Scr. 3/8-16 x 1.00" Lg.		32	736-0331		Bell.-Wash. .39" I.D. x 1.12" O.D.	
6	15786		Impeller Ass'y.	N	33	712-0798		Hex Nut 3/8-16 Thd.*	
7	736-0217		L.-Wash. 3/8" I.D.*		34	15779		Air Duct Ass'y.	N
8	710-0591		Hex Bolt 3/8-24 x 1.0" Lg. w/Patch		35	710-0201		Hex Bolt 3/8-16 x .75" Lg.*	
9	723-0137		P.V.C. Foam Strip (4-Pcs. 12" Lg.)		36	710-0344		Hex Bolt 3/8-16 x 1.50" Lg.*	
10	15780 --- 488		Vacuum Deck Ass'y.	N	37	736-0242		Bell.-Wash. .34" I.D. x .87" O.D.	
11	15796		Front Baffle Ass'y.	N	38	720-0170		Thumb Scr. 5/16-18 x .75" Lg.	
12	15788		Lower Baffle Ass'y.	N	39	712-0107		Hex Cent. L.-Nut 1/4-20 Thd.	
13	15790		Wiper Retaining Strip	N	40	712-0113		Wing Nut 1/4-20 (Plastic)	
14	728-0123		Pop Rivet .188" Dia.		41	710-0136		Hex Bolt 1/4-20 x 1.75" Lg.*	
15	735-0222		Nozzle Wiper Rear	N	42	764-0208		Vacuum Bag (6.6 Bushel)	N
16	712-0267		Hex Nut 5/16-18 Thd.*		43	749-0592		Lower Handle	N
17	736-0242		Bell.-Wash. .34" I.D. x .87" O.D.		44	14578		Height Adjuster Ass'y. Comp. - R.H.	
18	738-0102		Shld. Bolt 1/2" Dia. x 1.45" Lg. (3/8-16)			14579		Height Adjuster Ass'y. Comp - L.H. (Not Shown)	
19	734-1139		Wheel Ass'y. Comp. 8 x 1.75" - Front	N	45	1539-019		Push Speed Nut .25" Dia.	
20	736-0331		Bell.-Wash. .39" I.D. x 1.12" O.D.		46	711-0737		Stud Pin .250" Dia. x 1.75" Lg.	
21	15262		Wheel Pivot Bar		47	714-0105		Sq. Key 3/16 x 3/16 x 1.00" Lg.	N
22	15261		Index Plate		48	735-0221		Nozzle Wiper Side	N
23	736-0331		Bell.-Wash. .39" I.D. x 1.12" O.D.		49	15789		Wiper Retaining Strip	
24	712-0798		Hex Nut 3/8-16 Thd.*		50	710-0302		Hex Wash. Hd. "F" Tap Scr. #10	
25	14832		Spring Lever Ass'y. w/Knob		51	736-0169		L-Wash. 3/8" I.D.*	
26	738-0507		Shoulder Bolt .500" x 7/16" Lg. (3/8-16)						
27	726-0128		Push Cap .50" Rod (Black)						

*For faster service obtain standard nuts, bolts and washers locally. If these items cannot be obtained locally, order by part number and size as shown on parts list.

(488 - Mack Truck Yellow)
(615 - Red)

When ordering parts, if color or finish is important use the appropriate color code shown above. (e.g. Mack Truck Finish - 14542 (488).)



This instruction manual covers various models and all specifications shown do not necessarily apply to your model. Specifications subject to change without notice or obligation.

NOTE: The engine is not under warranty by the vacuum manufacturer . . . If repairs or service is needed on the engine, please contact your nearest authorized engine service outlet. Check the "Yellow Pages" of your telephone book under "Engines - Gasoline."



PARTS INFORMATION

POWER EQUIPMENT PARTS AND SERVICE

Parts and service are available through the authorized service firms listed below. All orders should specify the model number of your unit, part numbers, description of parts and the quantity of each part required.

NOTE: If any parts are found to be missing or defective upon assembly of this unit, write to advise the factory so that immediate replacement can be made.

ALABAMA	BIRMINGHAM
Auto Electric & Carburetor Co.	2625 4th Ave. S. 35233
ARKANSAS	NORTH LITTLE ROCK
Sutton's Lawn Mower Shop	5301 Roundtop Drive
	Box 368, Rt. 4 72117
CALIFORNIA	PORTERVILLE
Billious	75 North D Street 93257
COLORADO	DENVER
Spitzer Industrial Products Co.	6601 N.
	Washington St. 80229
FLORIDA	JACKSONVILLE
Radco Distributors	4909 Victor St.
	Box 5459 32207
	OPA LOCKA
Small Eng. Dist.	2351 N.W. 147th St. 33054
GEORGIA	EAST POINT
East Point Cycle & Key	2834 Church St. 30344
ILLINOIS	LYONS
Keen Edge Co.	8615 Ogden Ave. 60534
INDIANA	ELKHART
Parts & Sales Inc.	2101 Industrial Pkwy. 46516
IOWA	DUBUQUE
Power Lawn & Garden Equip.	2551 J.F. Kennedy 52001
LOUISIANA	MONROE
Mid-South Power	1500 Arkansas St. 71201
	NEW ORLEANS
Suhren Engine Co.	8330 Earhart Blvd. 70118
MARYLAND	TAKOMA PARK
Center Supply Co.	6867 New Hampshire
	Ave. 20912
MASSACHUSETTS	SPRINGFIELD
Morton B. Collins Co.	300 Birnie Ave. 01107
MICHIGAN	LANSING
Lorenz Service Co.	2500 S. Pennsylvania 48910
	MOUNT CLEMENS
Power Equipment Dist.	340 Hubbard 48043
MINNESOTA	HOPKINS
Hance Distributing Inc.	420 Excelsior Ave. W. 55343
MISSISSIPPI	BILOXI
Biloxi Sales & Service, Inc.	506 Caillavet St. 39533
MISSOURI	KANSAS CITY
Automotive Equip. Service	3117 Holmes St. 64109
	ST. JOSEPH
Ross-Frazier Supply Co.	8th and Monterey 64503
	ST. LOUIS
Henzler, Inc.	2015 Lemay Ferry Rd. 63125
NEW JERSEY	BELLMAR
Lawnmower Parts Inc.	717 Creek Rd. 08030
NEW MEXICO	ALBUQUERQUE
Spitzer Eng. & Parts	1023 Third Ave. N.W. 87103
NEW YORK	CARTHAGE
Gamble Dist., Inc.	West End Ave. 13619
	SCHOHARIE
Red Fox Parts Dist.	Rt. 30 P.O. Box 527 12157

BRIGGS AND STRATTON, TECUMSEH AND PEERLESS PARTS AND SERVICE

Briggs & Stratton, Tecumseh and Peerless parts and service should be handled by your nearest authorized engine service firm. Check the yellow pages of your telephone directory under the listing **Engines—Gasoline**, Briggs & Stratton or Tecumseh Lauson.

NORTH CAROLINA	GOLDSBORO
Smith Hardware Co.	515 N. George St. 27530
	GREENSBORO
Dixie Sales Company	335 N. Green 27402
OHIO	CARROLL
Stebbe's Mid-State Mower Supply ..	Box 366, 71 High St. 43112
	CLEVELAND
Bleckrie, Inc.	7900 Lorain Ave. 44102
	WADSWORTH
National Central	687 Seville Rd. 44281
	YOUNGSTOWN
Burton Supply Co.	1301 Logan Ave.
	Box 929 44501
OKLAHOMA	MUSKOGEE
Victory Motors, Inc.	605 S. Cherokee 74401
OREGON	PORTLAND
Kenton Supply Co.	8216 N. Denver Ave. 97217
PENNSYLVANIA	HARRISBURG
EECO Inc.	4021 N. 6th St. 17110
	PHILADELPHIA
Thompson Rubber Co.	5222-24 N. Fifth St. 19120
	PITTSBURGH
Bluemont Co.	11125 Frankstown Rd. 15235
	PUNXSUTAWNEY
Frank Roberts & Sons	R.D. 2 15767
	SCRANTON
Scranton Auto Ignition Co.	1133-35 Wyoming Ave. 18509
TENNESSEE	KNOXVILLE
Master Repair Service	2000 Western Ave. 37921
	MEMPHIS
American Sales & Service, Inc.	3035-43 Bellbrook 3811
TEXAS	DALLAS
Marr Brothers, Inc.	423 E. Jefferson 75203
	FORT WORTH
Woodson Sales Corp.	1702 N. Sylvania 76111
	HOUSTON
Bullard Supply Co.	2409 Commerce St. 77003
	SAN ANTONIO
Engine House Inc.	8610 Botts Lane
	P.O. Box 17867 78217
UTAH	SALT LAKE CITY
A-1 Engine & Mower Co.	439 E. 900 So. 84111
VIRGINIA	ASHLAND
RBI Corp.	101 Cedar Run Dr. 23005
WASHINGTON	SEATTLE
Bailey's Inc.	1414 14th Ave. 98122
WISCONSIN	APPLETON
Automotive Supply Co.	123 S. Linwood Ave.
	P.O. Box 798 54911
	CHILTON
Horst Dist.	444 N. Madison 53014

WARRANTY PARTS AND SERVICE POLICY

(0483)

The purpose of warranty is to protect the customer from defects in workmanship and materials, defects which are NOT detected at the time of manufacture. It does not provide for the unlimited and unrestricted replacement of parts. Use and maintenance are the responsibility of the customer. The manufacturer cannot assume responsibility for conditions over which it has no control. Simply put, if it's the manufacturer's fault, it's the manufacturer's responsibility; if it's the customer's fault, it's the customer's responsibility.

CLAIMS AGAINST THE MANUFACTURER'S WARRANTY INCLUDES:

1. Replacement of Missing Parts on new equipment.
2. Replacement of Defective Parts within the warranty period.
3. Repair of Defects within the warranty period.

All claims MUST be substantiated with the following information:

1. Model Number of unit involved.
2. Date unit was purchased or first put into service.
3. Date of failure.
4. Nature of failure.